

**ARRAYED WAVEGUIDE GRATINGS WITH
IMPROVED TRANSMISSION EFFICIENCY**

ABSTRACT OF THE DISCLOSURE

5 An arrayed waveguide grating (AWG) with improved transmission efficiency includes an input $P \times M$ star coupler, an output $M \times Q$ star coupler, and M waveguides of unequal length connecting the input and output star couplers. A novel method used to determine the optimum position of the ports ensures that the maximum frequency deviation between the signal frequency
10 and the center of the corresponding transmission passband is minimal for all possible connections among input and output ports.